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Exhibit R-2, RDT&E Budget Item Justification: PB 2011 Air Force									DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)							
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
Total Program Element	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing
673326: Precision Measurement & Calibration	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing

A. Mission Description and Budget Item Justification

This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.

This program is in budget activity 7 - Operational System Development because it supports operational systems.

UNCLASSIFIED

R-1 Line Item #231

Page 1 of 8

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY		R-1 ITEM NOMENCLATURE			
3600: Research, Development, Test & Evaluation, Air Force		PE 0702207F: Depot Maintenance (Non-IF)			
BA 7: Operational Systems Development					
B. Program Change Summary (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
Previous President's Budget	1.527	1.508	0.000	0.000	0.000
Current President's Budget	1.489	1.508	1.514	0.000	1.514
Total Adjustments	-0.038	0.000	1.514	0.000	1.514
• Congressional General Reductions		0.000			
• Congressional Directed Reductions		0.000			
• Congressional Rescissions	0.000	0.000			
• Congressional Adds		0.000			
• Congressional Directed Transfers		0.000			
• Reprogrammings	0.000	0.000			
• SBIR/STTR Transfer	0.000	0.000			
• Other Adjustments	-0.038	0.000	1.514	0.000	1.514
Change Summary Explanation					
The FY 2010 President's Budget submittal did not reflect FY 2011 through FY 2015 funding. Therefore, explanation of changes between the two budget positions cannot be made in a relevant manner."					

UNCLASSIFIED

R-1 Line Item #231

Page 2 of 8

UNCLASSIFIED

Exhibit R-2A, RDT&E Project Justification: PB 2011 Air Force								DATE: February 2010			
APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>				R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>				PROJECT 673326: <i>Precision Measurement & Calibration</i>			
COST (\$ in Millions)	FY 2009 Actual	FY 2010 Estimate	FY 2011 Base Estimate	FY 2011 OCO Estimate	FY 2011 Total Estimate	FY 2012 Estimate	FY 2013 Estimate	FY 2014 Estimate	FY 2015 Estimate	Cost To Complete	Total Cost
673326: <i>Precision Measurement & Calibration</i>	1.489	1.508	1.514	0.000	1.514	1.536	1.587	1.612	1.636	Continuing	Continuing
Quantity of RDT&E Articles	0	0	0	0	0	0	0	0	0		
A. Mission Description and Budget Item Justification <p>This program develops, tests, and evaluates national and Air Force measurement standards (hardware) and calibration equipment in support of all Air Force programs and activities, including Precision Measurement Equipment Laboratories (PMELs) worldwide. Metrology research and development provides technology to support systems in all phases of development and acquisition, as well as Air Force R&D laboratories, test ranges, ground test facilities, and operational weapons systems support. Rapidly changing technology requires continuing research and development of measurement standards and calibration equipment to ensure modern weapon systems meet Air Force readiness objectives. This program addresses all metrology disciplines and includes the technology areas of laser, infrared, microwave, millimeter wave, optical, physical, mechanical, electrical, electronic, and ionizing radiation measurements. Metrology is a technical discipline devoted to the science of measurements and to the study and improvement of measurement technology. Measurements are the foundation of military system development, quality assurance, hardware conformance testing and system readiness tests. The integrity of these tests is assured through calibration and traceability assurance schemes. The capability to measure and calibrate must parallel the emergence of new technology, new ranges, and new capabilities of military systems. Lack of new measurement capability impedes or blocks the successful exploitation of new technologies, especially in the movement from development laboratory to production to deployment. R&D efforts are essential within the DoD to pace these requirements, otherwise, these same new systems will suffer time delays, excessive cost, and increased risk due to unreliable test results in all phases of development, production, deployment and operation.</p> <p>This program is in budget activity 7 - Operational System Development because it supports operational systems.</p>											
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
MAJOR THRUST: Continue development of national measurement standards to support Air Force infrared / laser / electro-optical weapon systems and support equipment.						0.504	0.578	0.549	0.000	0.549	
FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities											

UNCLASSIFIED

R-1 Line Item #231

Page 3 of 8

UNCLASSIFIED

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Continuation of above listed activities					
FY 2011 Base Plans: In FY 2011: Continuation of above listed activities					
FY 2011 OCO Plans: In FY 2011 OCO: Not applicable					
MAJOR THRUST: Continue development of standards for electrical measurements to support high accuracy electronic test equipment. FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities FY 2010 Plans: In FY 2010: Continuation of above listed activities FY 2011 Base Plans: In FY 2011: Continuation of above listed activities FY 2011 OCO Plans: In FY 2011 OCO: Not applicable	0.315	0.145	0.185	0.000	0.185
MAJOR THRUST: Continue development of standards for radar support, RF communication systems, and radar cross section range measurements. FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities	0.136	0.140	0.155	0.000	0.155

UNCLASSIFIED

R-1 Line Item #231

Page 4 of 8

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development		R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)		PROJECT 673326: Precision Measurement & Calibration	
B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Continuation of above listed activities					
FY 2011 Base Plans: In FY 2011: Continuation of above listed activities					
FY 2011 OCO Plans: In FY 2011 OCO: Not applicable					
MAJOR THRUST: Continue the development of improved calibration standards to support physical, mechanical and electro-mechanical support equipment. FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities FY 2010 Plans: In FY 2010: Continuation of above listed activities FY 2011 Base Plans: In FY 2011: Continuation of above listed activities FY 2011 OCO Plans: In FY 2011 OCO: Not applicable	0.285	0.365	0.320	0.000	0.320
MAJOR THRUST: Continue the development of national standards for calibration of ionizing radiation hazard instrumenation. FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities	0.040	0.045	0.045	0.000	0.045

UNCLASSIFIED

R-1 Line Item #231

Page 5 of 8

UNCLASSIFIED

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B. Accomplishments/Planned Program (\$ in Millions)					
	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total
FY 2010 Plans: In FY 2010: Continuation of above listed activities					
FY 2011 Base Plans: In FY 2011: Continuation of above listed activities					
FY 2011 OCO Plans: In FY 2011 OCO: Not applicable					
MAJOR THRUST: Continue development of improved standards and procedures to support chemical/ biological measurements FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities FY 2010 Plans: In FY 2010: Continuation of above listed activities FY 2011 Base Plans: In FY 2011: Continuation of above listed activities FY 2011 OCO Plans: In FY 2011 OCO: Not applicable	0.124	0.145	0.160	0.000	0.160
MAJOR THRUST: Continue development of standards, models and procedures to support analytical metrology applications FY 2009 Accomplishments: In FY 2009: Continuation of above listed activities	0.085	0.090	0.100	0.000	0.100

UNCLASSIFIED

R-1 Line Item #231

Page 6 of 8

UNCLASSIFIED

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APPROPRIATION/BUDGET ACTIVITY 3600: <i>Research, Development, Test & Evaluation, Air Force</i> BA 7: <i>Operational Systems Development</i>			R-1 ITEM NOMENCLATURE PE 0702207F: <i>Depot Maintenance (Non-IF)</i>			PROJECT 673326: <i>Precision Measurement & Calibration</i>					
B. Accomplishments/Planned Program (\$ in Millions)											
						FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	
<i>FY 2010 Plans:</i> In FY 2010: Continuation of above listed activities <i>FY 2011 Base Plans:</i> In FY 2011: Continuation of above listed activities <i>FY 2011 OCO Plans:</i> In FY 2011 OCO: Not applicable											
Accomplishments/Planned Programs Subtotals						1.489	1.508	1.514	0.000	1.514	
C. Other Program Funding Summary (\$ in Millions)											
Line Item	FY 2009	FY 2010	FY 2011 Base	FY 2011 OCO	FY 2011 Total	FY 2012	FY 2013	FY 2014	FY 2015	Cost To Complete	Total Cost
• PE Not Provided (7389): <i>Activity Not Provided</i>	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
D. Acquisition Strategy											
Primarily accomplish through intergovernmental transfer between the Department of Defense and other Federal Departments.											
E. Performance Metrics											
Please refer to the Performance Base Budget Overview Book for information on how Air Force resources are applied and how those resources are contributing to Air Force performance goals and most importantly, how they contribute to our mission.											

UNCLASSIFIED

R-1 Line Item #231

Page 7 of 8

UNCLASSIFIED

Exhibit R-3, RDT&E Project Cost Analysis: PB 2011 Air Force											DATE: February 2010		
APPROPRIATION/BUDGET ACTIVITY 3600: Research, Development, Test & Evaluation, Air Force BA 7: Operational Systems Development				R-1 ITEM NOMENCLATURE PE 0702207F: Depot Maintenance (Non-IF)				PROJECT 673326: Precision Measurement & Calibration					
Product Development (\$ in Millions)													
				FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total			
Cost Category Item	Contract Method & Type	Performing Activity & Location	Total Prior Years Cost	Cost	Award Date	Cost	Award Date	Cost	Award Date	Cost	Cost To Complete	Total Cost	Target Value of Contract
National Institute of Standards & Technology	MIPR	TBD TBD	1.258	1.215		1.435		0.000		1.435	Continuing	Continuing	Continuing
Department of Energy	MIPR	TBD TBD	0.045	0.050		0.000		0.000		0.000	Continuing	Continuing	Continuing
DoD Army	MIPR	TBD TBD	0.012	0.040		0.000		0.000		0.000	Continuing	Continuing	Continuing
AFMC	TBD/TBD	TBD TBD	0.076	0.078		0.079		0.000		0.079	Continuing	Continuing	Continuing
AFMC (AEDC)	MIPR	TBD TBD	0.090	0.125		0.000		0.000		0.000	0.000	0.215	0.000
Contract	TBD/TBD	TBD TBD	0.008	0.000		0.000		0.000		0.000	Continuing	Continuing	Continuing
Subtotal			1.489	1.508		1.514		0.000		1.514			
Remarks													
			Total Prior Years Cost	FY 2010		FY 2011 Base		FY 2011 OCO		FY 2011 Total	Cost To Complete	Total Cost	Target Value of Contract
Project Cost Totals			1.489	1.508		1.514		0.000		1.514			
Remarks													
Total Prior Years Cost may include only FY 2009 data.													

UNCLASSIFIED

R-1 Line Item #231

Page 8 of 8